
**WATER & SEWER
COMMISSION**

January 25, 2019

Mr. Douglas Koopman
United States Environmental Protection Agency
5 Post Office Sq. Suite 100 OES04-4
Boston, MA 02109-3912

Mr. Kevin Brander
MassDEP
Northeast Regional Office
2015 B Lowell St.
Wilmington, Ma 01887

Re: Lynn Water & Sewer Commission
Third Modified Consent Decree
Semi Annual Report: CSO Separation Project Updates

Dear Mr. Koopman and Mr. Brander:

The Lynn Water and Sewer Commission (LWSC) hereby submits the Semi-Annual Status Report in compliance with the requirements of Paragraph 26 of the Third Modified Consent Decree (TMCD). The purpose of this report is to describe in detail the status, progress, and work to be performed under **Section VI Compliance** Paragraphs 9 through 16 of the TMCD.

Paragraph 9: Implementation of the October 2014 LWSC CSO Supplemental Facilities Plan

At the January 9, 2017 LWSC Commission Meeting the Board voted to approve the TMCD and directed the Executive Director and LWSC Attorney to sign the agreement as presented.

Paragraph 9a. Inflow and Infiltration (I&I) Program Submittal and Approval

In October 2017 LWSC contracted its general engineering service provider Weston & Sampson of Peabody, MA implement a groundwater monitoring program to begin in February 2018. The program incorporates installation of flow meters, identification of sub areas, rainfall and ground water monitoring.

To date, Weston & Sampson and sub-contractor Flow Assessment Services have installed fourteen (14) flow meters and installed four (4) monitoring wells. Data will then be analyzed and a priority ranking will be established, with a Phase I Report to be submitted to DEP and EPA in September 2018.

Paragraph 9b. "Notice of Project Change" filing to Massachusetts Executive Office of Energy and Environmental Affairs (EEA)

On May 22, 2017 LWSC filed a Notice of Project Change with EEA re: the need for a pump

station and the use of existing Outfall 002 located on the grounds of the Lynn Regional Water Pollution Control Facility. In July of 2017 the Notice of project change was accepted by EEA.

Paragraph 9c. “Bennett Street Storm Drain and Outfall Project” Design Plan Submittal

LWSC Board of Commissioners voted to award the ‘Preliminary Engineering Design for Sewer Separation in the Bennett Street Area’ to Stantec Consulting Services. This Preliminary Design report will be submitted to the regulatory agencies on or before July 31, 2018.

Paragraph 9d. Blossom/ Commercial Street Storm Drain Design Plans

Deliverable due on or before July 31, 2019. See attached pages from LWSC Engineering Firm, Stantec Consulting Engineers, for detailed monthly progress summaries.

Paragraph 9e. Bennett Street Storm Drain and Outfall Construction Completion

Deliverable due on or before October 31, 2019

Paragraph 9f. Blossom/ Commercial Street Storm Drain Project Construction Completion

Deliverable due on or before October 31, 2019

Paragraph 9g. Bennett Area Construction Completion

Deliverable due on or before October 31, 2024

Paragraph 9h. WPCF Sluice Gate Design Plans

Deliverable due on or before March 31, 2024

Paragraph 9i. High Flow Management Plan

Deliverable due on or before September 1, 2024

Paragraph 9j. WPCF Sluice Gate Construction Completion

Deliverable due on or before December 31, 2026

Paragraph 9k. CSO 005 Sewer Separation Design Plans

Deliverable due on or before January 31, 2026

Paragraph 9l. CSO 005 Sewer Separation Construction Completion

Deliverable due on or before July 31, 2030

Paragraph 10. CSO Notification and Monitoring

LWSC will continue to follow the submitted and approved Overflow Response Plan, which

includes real-time monitoring at regulator structures, notification to regulatory agencies and surrounding communities, and publicize the information on LWSC's website.

Paragraph 11. Updated Overflow Response Plan

The Updated Overflow Response Plan was submitted in September of 2015. Comments were received from the Regulatory Agencies and an Updated Overflow Response Plan submitted by LWSC in April 2016. The Final Plan was accepted in April 2017.

Paragraph 12. Overflow Response Plan- Monitoring at King's Beach

For the period of January 1, 2018 – June 30, 2018 zero samples were collected due to CSO overflow event(s) at Sanderson Avenue and Groveland St. overflow structures.

Paragraph 13. CMOM Practices

LWSC will continue to submit on or before January 31, of each year, an annual report complying with the requirements of Paragraph 13 of the TMCD.

Paragraph 14. MS4 Outfall Sampling and Maintenance Practices


LWSC will continue to implement proper operation and maintenance actions for the MS4, WPCF, and Collection System consistent with the LWSC Updated High Flow Management Plan, BMP's for Kings Beach Outfall, and Updated Overflow response plan.

Paragraph 15. Solids and Floatables Plan

A plan was submitted in October 2017 to the Regulatory Agencies. Comments were received and were implemented into the updated/ revised plan, submitted on February 24, 2018.

If you have any questions or require additional information, please contact me at (781) 596-2400, ext. 202

Sincerely,


Anthony J. Marino, P.E.
Chief Engineer



Monthly Progress Report No. 7

Lynn Water and Sewer Commission
Sewer Separation Preliminary Design Services 2017
Purchase Order #18-226
Period: July 1, 2018 through July 28, 2018

The following is a summary of work activities performed this period:

Project Management

- Prepared Invoice No. 6 and Monthly Progress Report No. 6 for the period between May 26, 2018 and June 30, 2018.
- Prepared for and attended Board of Commissioner's Meeting on July 8, 2018. The results of the preliminary design phase were presented to the Commissioners.
- Met with LWSC via teleconference to the review comments on the Draft Preliminary Design Report.
- Performed final review of the Final Preliminary Design Report.

Review of Data, Hydraulic Model and Conceptual Design

No work activities performed this period.

Data Collection

SMC completed supplemental ground survey and basemapping activities.

Preliminary Design

- Incorporated LWSC comments on the Draft Preliminary Design Report into the final document.
- Finalized 30% design drawings upon receipt of final basemap from SMC.
- Revised schedule and opinion of probable construction costs for the project.
- Completed and submitted Final Preliminary Design Report to LWSC on Friday, July 20, 2018.



Monthly Progress Report No. 8

Lynn Water and Sewer Commission
Sewer Separation Preliminary Design Services 2017
Purchase Order #18-226
Period: July 28, 2018 through August 24, 2018

The following is a summary of work activities performed this period:

Project Management

- Prepared Invoice No. 7 and Monthly Progress Report No. 7 for the period between June 23, 2018 and July 27, 2018.
- Performed final review of the Final Preliminary Design Report for DEP submittal.

Review of Data, Hydraulic Model and Conceptual Design

No work activities performed this period.

Data Collection

No work activities performed this period. Subconsultant invoice for work in previous month has been submitted.

Preliminary Design

Submitted Final Preliminary Design Report to DEP on Monday, July 30, 2018.



Monthly Progress Report No. 1

Lynn Water and Sewer Commission

West Lynn Sewer Separation

Professional Engineering Services for Detailed Design & Phase 1 Bid Documents

Purchase Order #18-226

Period: August 1, 2018 through August 24, 2018

The following is a summary of work activities performed this period:

Project Management

- Prepared a Project Evaluation Form (PEF) for the Clean Water State Revolving Fund (CWSRF) loan program for the subject project. The PEF was submitted to Massachusetts Department of Environmental Protection on August 23, 2018.
- Set-up project files and drafted subconsultant agreements.

Financial Capability Assessment

No work activities performed this period.

Field Investigations

No work activities performed this period.

Final Design Engineering Analysis

No work activities performed this period.

Contract Plans, Specifications and Cost Estimates

No work activities performed this period.

Bidding Services

No work activities performed this period.



Monthly Progress Report No. 2

Lynn Water and Sewer Commission

West Lynn Sewer Separation

Professional Engineering Services for Detailed Design & Phase 1 Bid Documents

Purchase Order #18-226

Period: August 25, 2018 through September 29, 2018

The following is a summary of work activities performed this period:

Project Management

- Prepared Invoice No. 1 and Monthly Progress Report No. 1 for the period between August 1, 2018 through August 24, 2018.
- Developed project plan and implementation schedule.
- Prepared sub-consultant's scope of work and executed signed agreements with Tetra Tech (Engineering Services), Survey and Mapping Consultants (Survey) and Inland Waters (CCTV).
- Attended Commission meeting on September 10, 2018.
- Reviewed and provided response to EPA letter dated September 18, 2018. The letter from EPA requested clarification on the schedule for Article 97 permitting and identified the need to simultaneously prepare plans for an alternative pump station location.

Financial Capability Assessment

No work activities performed this period.

Field Investigations

- Conducted field investigations in the Camden Street / River Street Area and adjacent to CSO 003 on September 7th and 14th. The work included GIS research and preparation of maps for use in the field. A memorandum documenting the field investigations has been drafted for internal review.
- Prepared mapping for and identified the limits of additional survey required in the Project Area.
- Reviewed scope of geotechnical boring program and began development of an alternative approach to data collection.
- Identified final limits of pipe segments to be cleaned and inspected.

Final Design Engineering Analysis

- Performed hydraulic modeling to evaluate limits of model-predicted flooding during the August 12, 2018 storm event. A similar evaluation was also performed for the storm event that occurred on September 30, 2017.
- Obtained and reviewed meter data for CSO 003

- Prepared SWMM Model and previously developed ICM Model for use under the subject project.

Contract Plans, Specifications and Cost Estimates

- Reviewed and revised permitting schedule to align with project implementation schedule.
- Prepared letters to be sent to utility companies notifying them of the upcoming work.

Bidding Services

No work activities performed this period.



Monthly Progress Report No. 3

Lynn Water and Sewer Commission

West Lynn Sewer Separation

Professional Engineering Services for Detailed Design & Phase 1 Bid Documents

Purchase Order #18-226

Period: September 23, 2018 through October 26, 2018

The following is a summary of work activities performed this period:

Project Management

- Prepared Invoice No. 2 and Monthly Progress Report No.2 for the period between August 25, 2018 through September 22, 2018.
- Prepared sub-consultant's scope of work and drafted agreements with Stacey Depasquale Engineering (Private Property Inflow) and New England Boring Contractors (Geotech and OHM).
- Attended City Council sub-committee meeting on September 25, 2018.
- Held internal kick-off meeting with subconsultants and discipline leads.
- Continued to review project schedule and budget.

Financial Capability Assessment (FCA)

- Reviewed initial financial data provided by the Commission.
- Developed schedule for completion of the FCA.
- Prepared for an attended financial infrastructure workshop with Commission staff on October 16, 2018. This included development of a presentation outlining the steps of the FCA.
- Held conference call with Commission staff to review additional financial data on October 24, 2018.
- Reviewed *Wastewater Treatment Plant Managed Assets Inspection* Report prepared by Jacobs CH2M to project capital costs associated with the pump station and LRWWTP.

Field Investigations

- Prepared memorandum documenting the results of field investigations in the Camden Street/River Street Area. The memorandum will include updated GIS maps, manhole inspections forms and photographs.
- Developed initial scope of work for private property inspections.
- Conducted field survey and basemapping for the remainder of the streets within the project area that were not completed during preliminary design.
- Developed map identifying the location of geotechnical borings required. Depths of each boring were refined based on the depth of proposed storm drain pipes.

- Initiated the CCTV program on October 9, 2018. Prior to beginning the program, work under this task included development of maps and a database for tracking the inspections as well as identifying procedures for tracking police details.

Final Design Engineering Analysis

- Began hydraulic modeling using SWMM to evaluate the potential for routing stormwater for a portion of the project area to CSO 004. This included modifying the Commission's existing CSO model to include drainage systems and subcatchments in the vicinity of CSO 004.
- Initiated hydraulic modeling to evaluate the piping systems in the vicinity of CSO 003.
- Began development of memorandum to document the results of hydraulic modeling.
- Identified potential contaminants to be assessed as part of the water quality modeling.
- Reviewed comments provided by EPA and MassDEP on the Preliminary Design Report on October 23, 2018. Initial responses to the comments have been developed and will be shared with the Commission at upcoming meetings.

Contract Plans, Specifications and Cost Estimates

- Developed figures showing the pump station facility at Neptune Boulevard Playground for purposes of initiating the Article 97 process with MEPA and local stakeholders.
- Continued to prepare letters to be sent to utility companies notifying them of the upcoming work.
- Incorporated existing MWRA pipelines into the Civil 3D pipe network being utilized for the project.
- Began review of utility survey and basemapping. Identified locations with missing or insufficient utility records.
- Reviewed design of storm drain network for purposes of identifying the areas to be included in the Phase I Separation. Began modifying the horizontal and vertical alignments of the proposed storm drain and sewer pipes to minimize impacts to existing utilities.
- Conducted site visit at Neptune Boulevard Playground to identify potential mitigation measures required for the Article 97 process. The visit was conducted by landscape and architectural staff.

Bidding Services

No work activities performed this period.



Monthly Progress Report No. 4

Lynn Water and Sewer Commission

West Lynn Sewer Separation

Professional Engineering Services for Detailed Design & Phase 1 Bid Documents

Purchase Order #19-207

Period: October 27, 2018 through November 23, 2018

The following is a summary of work activities performed this period:

Project Management

- Prepared Invoice No. 3 and Monthly Progress Report No.3 for the period between September 23, 2018 through October 26, 2018.
- Prepared for and attended kick-off meeting at the Commission Offices on Thursday, November 8, 2018. Meeting minutes have been drafted and are undergoing an internal review before being forwarded to the Commission.
- Continued to update the project implementation schedule and review the budget. A project change log has been developed to track scope changes.
- Prepared financial forecast identifying project expenditures associated with the current contract. This was shared with Commission staff at the kick-off meeting.

Financial Capability Assessment (FCA)

- Continued to develop the baseline financial plan and gather additional data required to populate the model. This included a review of the Commission's capital improvement plan.
- Reviewed billing data provided by the Commission for purposes of preparing the enhanced affordability analysis.

Field Investigations

- Identified field investigations to be performed in the CSO 004 tributary area.
- Coordinated with SDE to prepare schedule for the Private Property Investigations. It is anticipated these investigations will begin in mid-December.
- Survey and base-mapping files for the remainder of the project area requiring supplemental survey were submitted to Stantec for review in early November. Stantec will provide comments to SMC (survey subconsultant) prior to finalizing the drawings.
- Continued to develop the scope of the Geotechnical and Hazardous Materials Program and identify chemical and physical lab testing required. It is anticipated the program will begin in late December/ early January.
- Continued to monitor the CCTV program. As of November 23rd, Inland Waters has inspected approximately 20,000 of the 52,250 linear feet identified in the original scope.

Final Design Engineering Analysis

- Continued to perform hydraulic modeling using SWMM to evaluate the potential for routing stormwater for a portion of the project area to CSO 004.
- Reviewed catchment area tributary to CSO 003 for purposes of evaluating the hydraulics in the Summer Street sewer system.
- Began development of ICM model to further evaluate proposed drain pipe sizing.
- Established plan and schedule for water quality modeling.
- Further developed responses to EPA and MassDEP comments on the Preliminary Design Report.

Contract Plans, Specifications and Cost Estimates

- Attended meeting with MEPA to review the Article 97 process relative to the pump station facility at Neptune Boulevard Playground. This included further development of figures depicting the location of the pump station within the Park. An additional meeting will be held with MEPA staff that specializes in Article 97 land takings.
- Finalized letters to be sent to utility companies and impacted agencies notifying them of the upcoming work.
- Reviewed and developed details to be used for the separation work.
- Modified 30% design drawings to depict the proposed work at 20-scale rather than 40-scale.
- Continued to revise horizontal and vertical alignments of the proposed storm drain and sewer pipes to minimize impacts to existing utilities.
- Evaluated potential option to route stormwater flow from a portion of the project area to CSO 003. This will be further discussed with the Commission in early December.
- Developed renderings of the pump station electrical building and generator.
- Reviewed flood elevations in the vicinity of the pump station for purposes of establishing the first floor elevation of the electrical building.

Bidding Services

No work activities performed this period.



Monthly Progress Report No. 5

Lynn Water and Sewer Commission

West Lynn Sewer Separation

Professional Engineering Services for Detailed Design & Phase 1 Bid Documents

Purchase Order #19-207

Period: November 23, 2018 through December 21, 2018

The following is a summary of work activities performed this period:

Project Management

- Prepared Invoice No. 4 and Monthly Progress Report No.4 for the period between October 27, 2018 through November 23, 2018.
- Reviewed and responded to comments on prior invoices.
- Prepared schedule and identified staff for quality review of 60% design submittal.
- Attended monthly Commissioner's Meeting on December 10, 2018.

Financial Capability Assessment (FCA)

- Input assumptions and populated data in the Financial Analysis and Management System (FAMS).
- Gathered census data for the FCA.
- Prepared and reviewed baseline financial plan and assumptions. This included development of a workbook documenting the preliminary financial plan. The future capital expenditures, including those associated with the MS4 permit and I/I removal plan, were also reviewed.
- Held conference call with Commission staff on November 29, 2018 to review the FAMS.

Field Investigations

- Performed field investigations in the Outfall 004 area to confirm record information for purposes of verifying the hydraulic model.
- Prepared for Private Property Inflow Investigation Program. This included developing a scope for and coordinating with SDE; preparing plans and a list of buildings to be inspected; drafting letters to be sent to property owners notifying them of the upcoming inspections; coordinating with the Commission to obtain ID badges, and preparing forms to be used during the inspections.
- Continued to refine and develop the basemapping. A list of comments on the preliminary basemapping was provided to the surveyor (SMC). Additional survey was also identified in the vicinity of the proposed outfall to facilitate the design and allow for dredging calculations to be performed.
- Finalized the geotechnical boring program. The program is scheduled to begin in early January. Geotechnical lab testing requirements were also established and initial costs were obtained.



Monthly Progress Report No. 5

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- Reviewed results of the CCTV Program. Inland Waters is approximately 40% complete with the inspections. Delays were experienced in December due to lack of police details. These issues have been resolved.
- Identified additional CCTV inspections to be performed in the Camden St/ River St Area.

Final Design Engineering Analysis

- Reviewed catchment area tributary to Outfall 003 to evaluate the impact of the size of the existing combined sewer in Summer Street on CSOs.
- Reviewed hydraulics of the Strawberry Brook conduit to determine if a portion of the flow from the project area may be routed to the pipe.
- Began developing ICM model of the proposed storm drain network. This will be used to optimize pipe sizes and perform the catch basin spread analyses. This included a review of the catchment areas and catch basin locations.
- Continued to evaluate water quality parameters for the proposed outfall. Prepared narrative to be included in the supplement to the PDR that documents the assumptions made for the water quality assessment.
- Prepared responses to DEP comments on the Preliminary Design Report.

Contract Plans, Specifications and Cost Estimates

- Continued to advance the Article 97 process. Met with MEPA officials on December 12, 2018 to review the potential land taking at Neptune Boulevard Park.
- Prepared and sent letters to utilities and agencies that may potentially be impacted by the proposed work.
- Continued to develop plan and profiles for the proposed sewer and drain facilities, including the proposed force main. Storm drains located in Centre Street, Federal Street and Western Avenue were reconfigured to send stormwater flows to the Strawberry Brook Conduit.
- Continued to develop cover sheet, key plan and detail sheets.
- Coordinated with Commission staff to determine the limits of potential water main replacement. A street listing and map of the Phase 1 area was provided to the Commission for review.
- Reviewed the hydraulics associated with the pump station and force main. These will be optimized upon completion of the ICM model updates.
- Began design of the proposed storm outfall in the vicinity of Outfall 002. The new outfall will be located on the eastern side of the existing outfall.
- Began review of tunneling operations associated with Phase 2.

Bidding Services

No work activities performed this period